



Armed Forces College of Medicine

Anatomy department

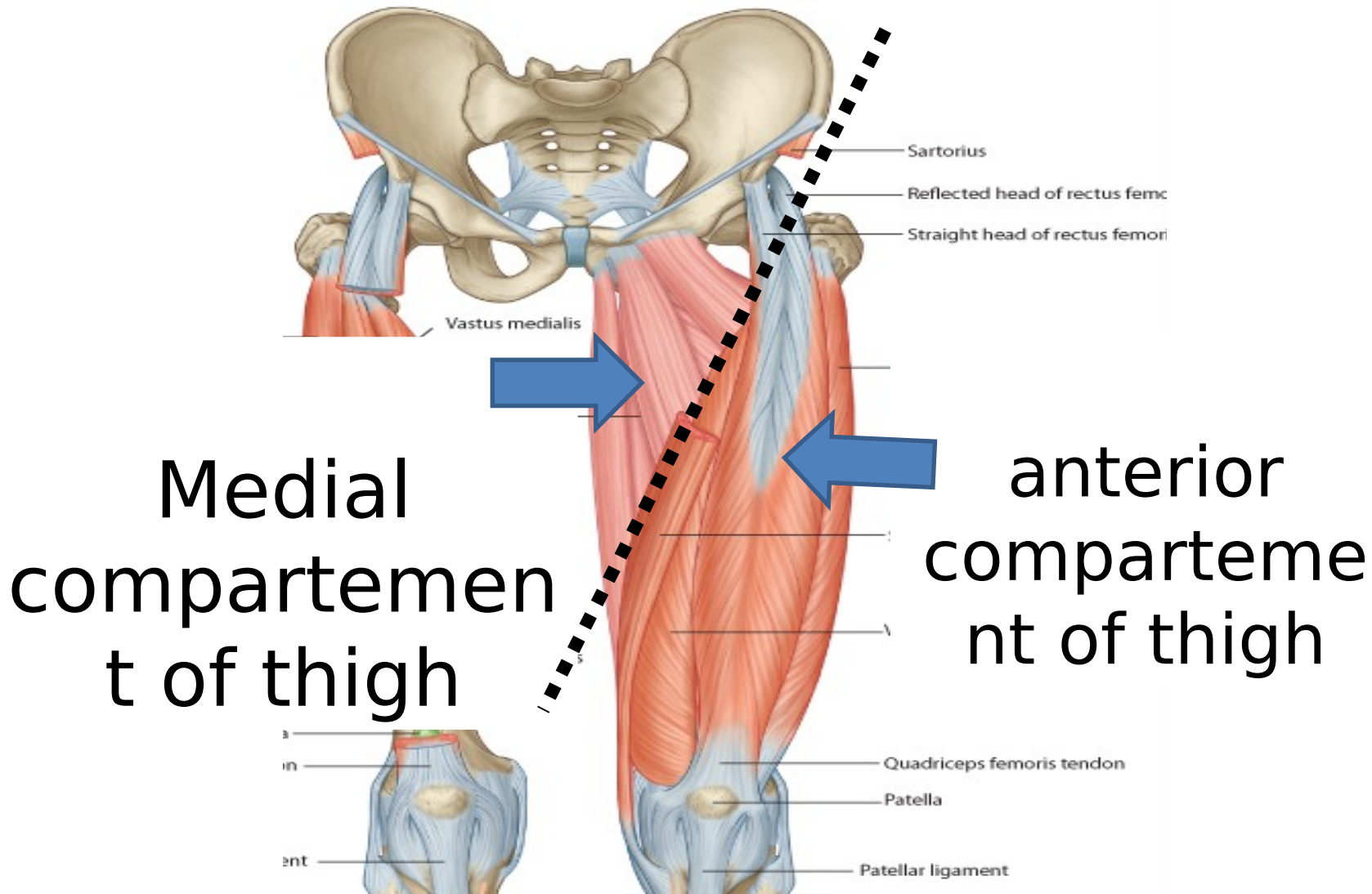


Medial side of thigh and adductor canal

INTENDED LEARNING OBJECTIVES (ILO)

1. Describe the attachments, action and nerve supply of muscles of the medial side of thigh (adductors & gracilis)
2. Describe root value, origin, course and branches of obturator nerve
3. Enumerate boundaries and contents of adductor canal

MEDIAL COMPARTMENT OF THIGH



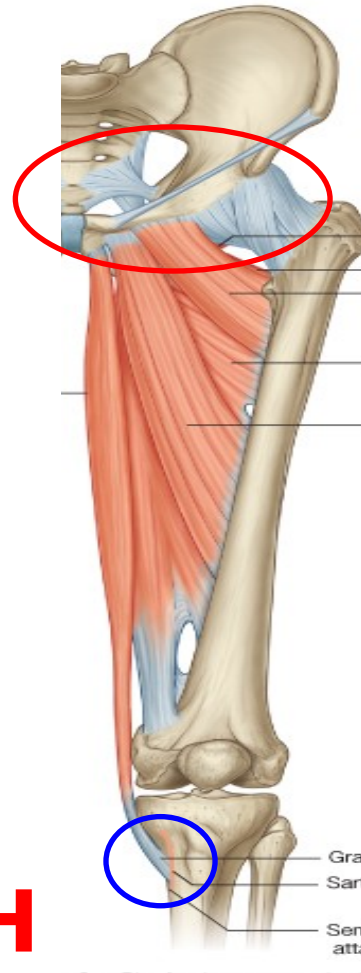
MEDIAL COMPARTMENT OF THIGH

- ❑ All are **originated** from hip bone
- ❑ All are **inserted** into the back of femur except the gracilis into the tibia.

:Action

All these muscles

ADDCUT THE THIGH



Femur
Posterior View



Netter atlas of Anatomy

MEDIAL COMPARTMENT OF THIGH

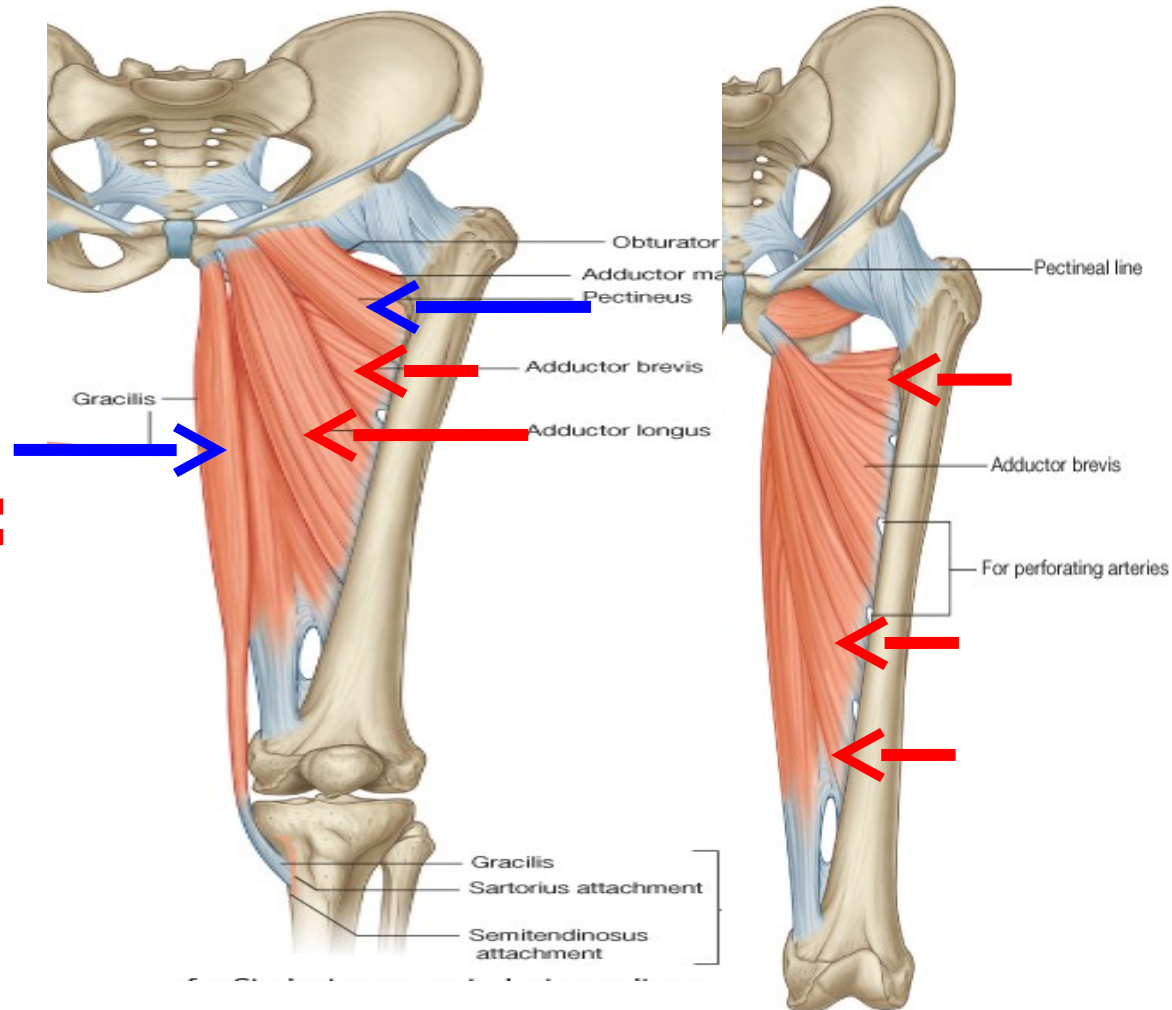
Contains 5 muscles:

➤ **pectinus**

➤ **Gracilis**

➤ **3 adductors:**

1. adductor longus,
2. adductor brevis
3. adductor magnus



MEDIAL COMPARTMENT OF THIGH

:Cutaneous nerve supply

- .Ilioinguinal nerve: skin of upper 1/3.1
- .Obturator nerve : skin of middle 1/3.2
- .Medial cutaneous nerve of thigh: skin of lower 1/3.3

Muscles of the medial side of the thigh

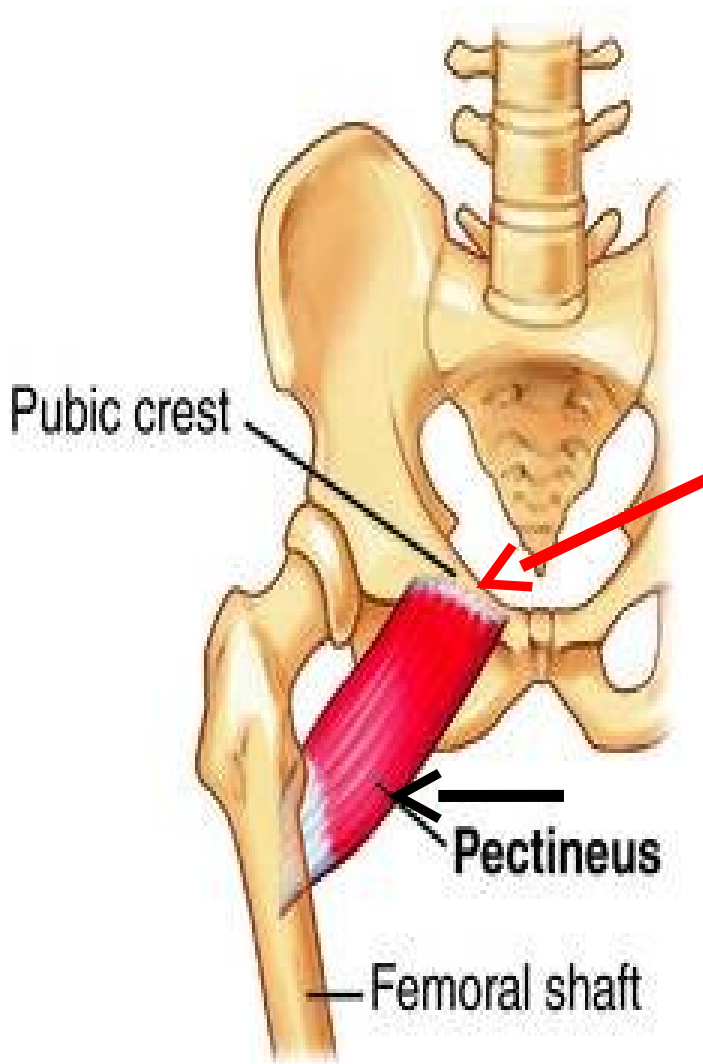
□ :(medial femoral muscles)

- .Include : pectineus, gracilis and 3 adductors
- : Are arranged into 3 layers
 - a) The anterior layer (pectineus , adductor longus & .gracilis)
 - .b) The middle layer (adductor brevis)
 - c) The posterior layer (adductor magnus). □
- All are inserted into the back of femur except the .gracilis into the tibia

MEDIAL COMPARTMENT OF THIGH

Pectineus

- **Origin:**
superior pubic ramus & pectineal line
- **Insertion:**
to upper part of linea aspera
- **Nerve supply:**
femoral n



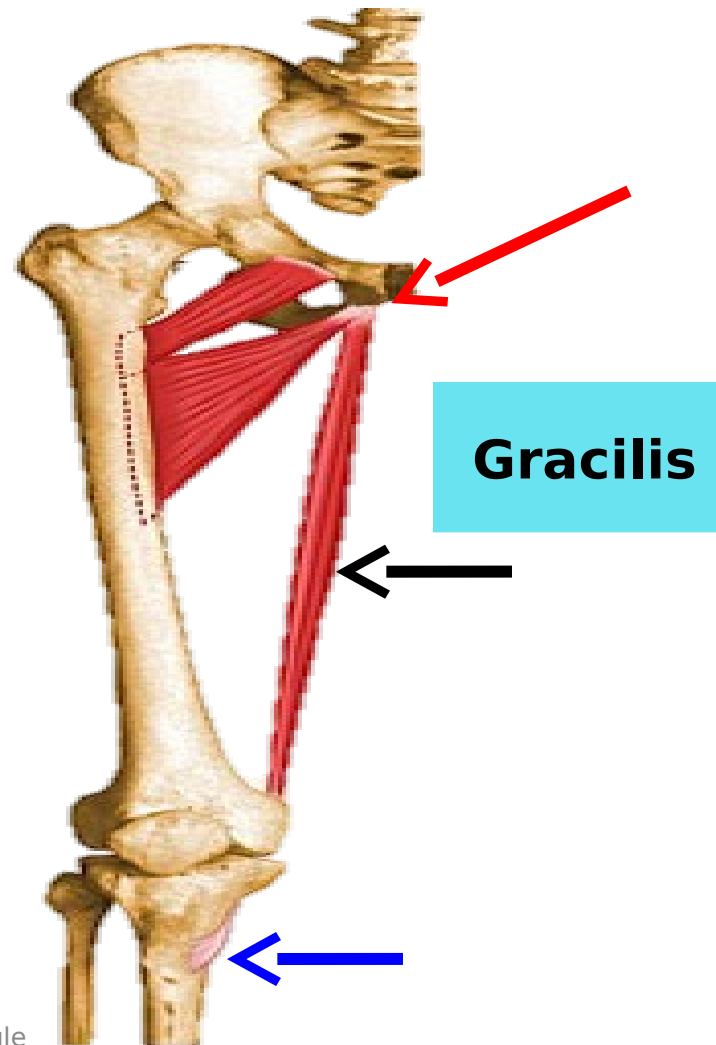
Femur
Posterior View



MEDIAL COMPARTMENT OF THIGH

Gracilis

- **Origin:**
- **lower $\frac{1}{2}$ of body of pubis & pubic arch**
- **Insertion:**
- **upper part of medial surface of tibia**
- **Nerve supply:**
- **obturator nerve**



MEDIAL COMPARTMENT OF THIGH

Pectineus

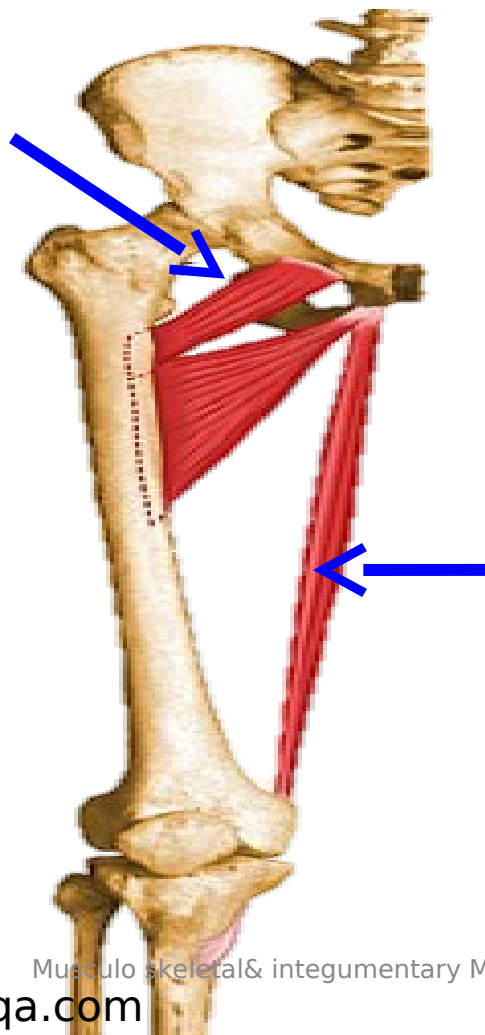
**Act on the
hip joint**

Action
**Adduction
&
flexion of
thigh**

Gracilis

**Act on the
knee joint**

Action
▪ **flexion of the
knee**
▪ **rotate semi-
flexed knee
medially**



MEDIAL COMPARTMENT OF THIGH

3 ADDUCTORS MUSCLES

*arranged into 3
layers:*

❖ **Superficial →**
Adductor

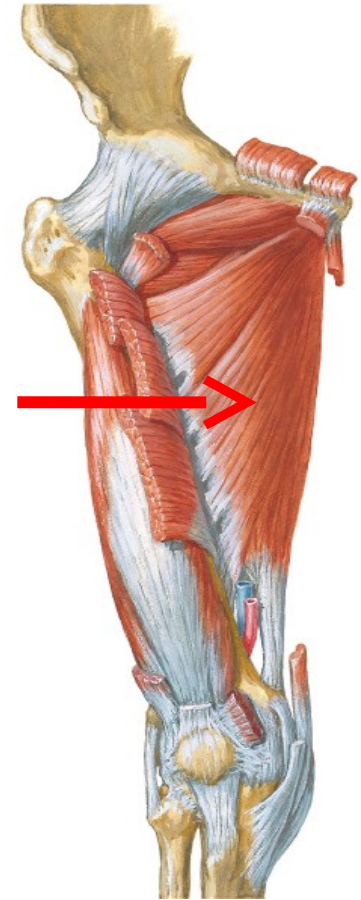
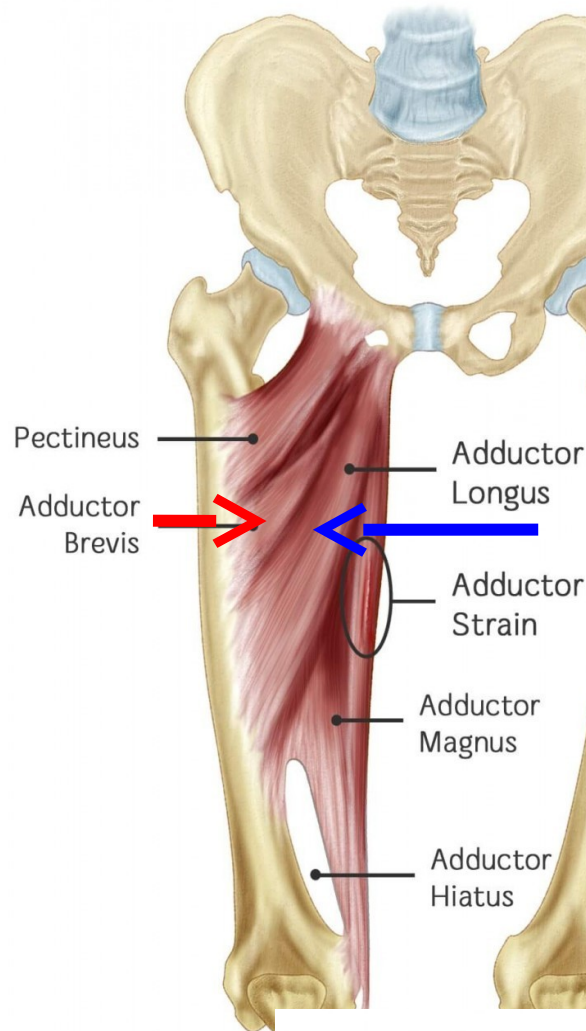
Longus

❖ **Middle →**

Adductor

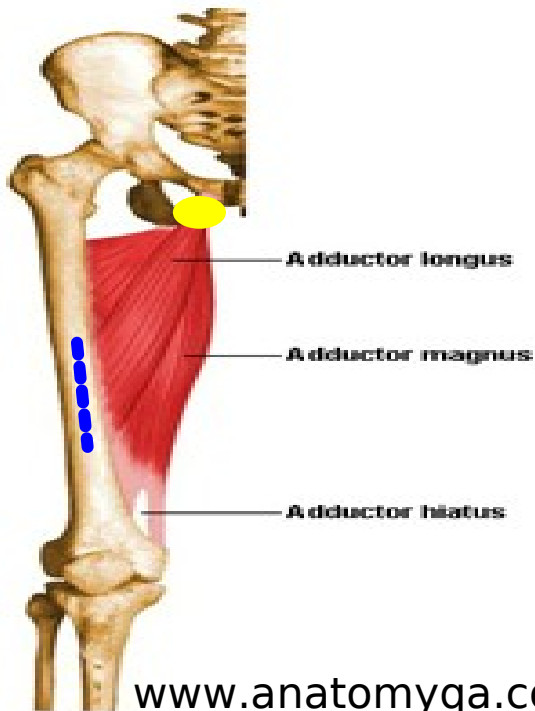
Brevis

❖ **deep →**



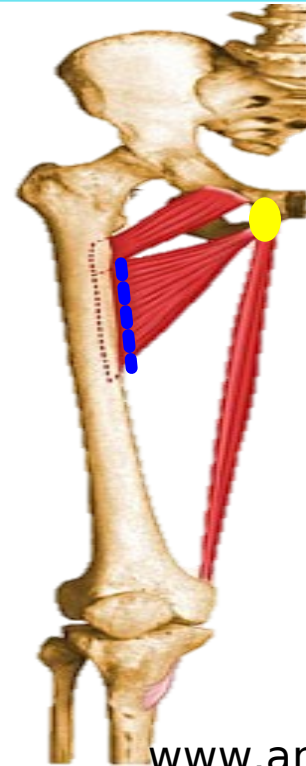
MEDIAL COMPARTMENT OF THIGH

Adductor longus



- **Origin:**
- front of body of pubis just below pubic tubercle

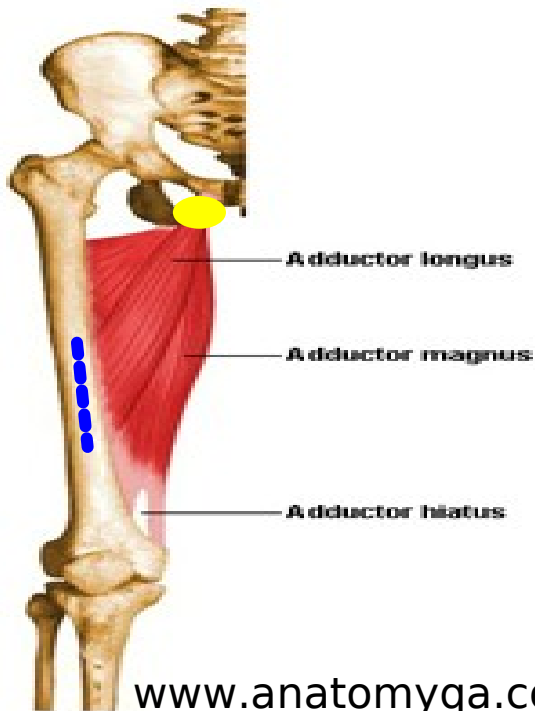
Adductor brevis



- **Origin:**
- from body of pubis inferior to adductor longus & extends into inferior pubic ramus

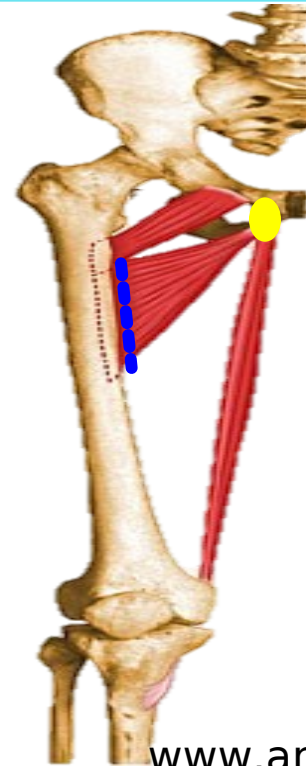
MEDIAL COMPARTMENT OF THIGH

Adductor longus



- **Origin:**
- front of body of pubis just below pubic tubercle

Adductor brevis



- **Origin:**
- from body of pubis inferior to adductor longus & extends into inferior pubic ramus

MEDIAL COMPARTMENT OF THIGH

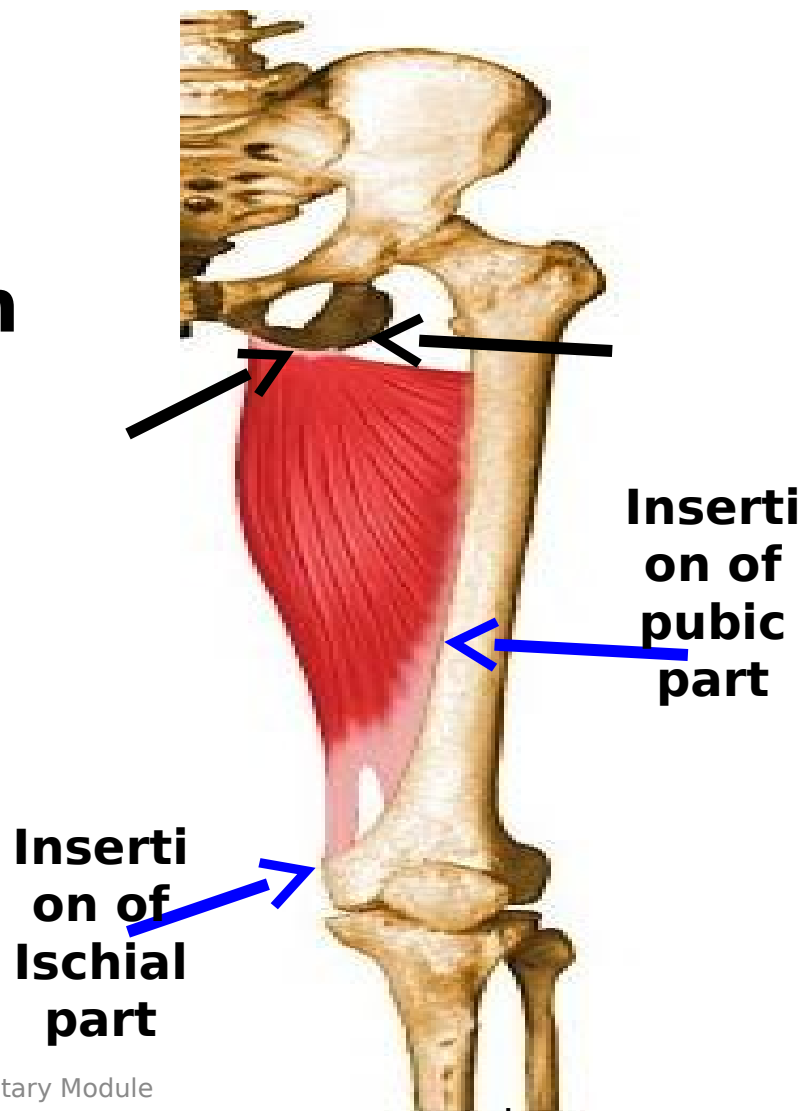
Adductor magnus

- Origin:

1. **Pubic part:** pubic arch
2. **Ischial part:** ischial tuberosity

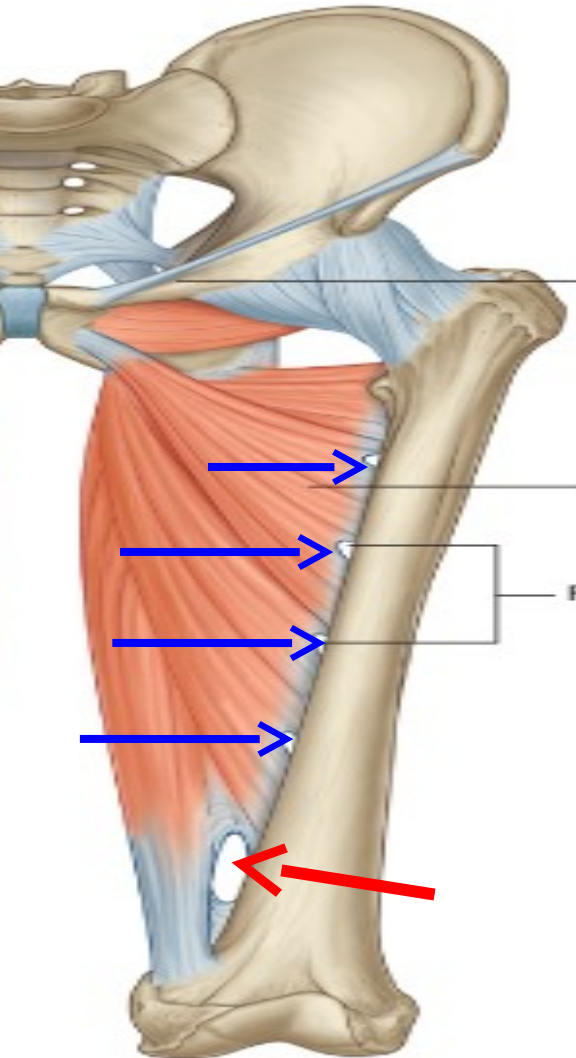
- Insertion:

1. **pubic part** → linea aspera & medial supracondylar line
2. **Ischial part** → adductor tubercle of femur



MEDIAL COMPARTMENT OF THIGH

Adductor magnus



□ Its pubic part presents **tendinous passages** for the .perforating arteries

□ Between the pubic part and the ischial part there is a triangular opening → for the **(adductor hiatus)** passage of the **femoral vessels**

MEDIAL COMPARTMENT OF THIGH

Muscle	Origin	Insertion
<i>Pectineus</i>	a) pectin pubis (pectineal line) b) pectineal surface of the superior pubic ramus	upper <i>1/2</i> of a line <i>extending from lesser trochanter to linea aspera.</i>
<i>Adductor longus</i>	Front of the body of pubis just below pubic tubercle	middle part of the linea aspera
<i>Adductor brevis</i>	a) body of pubis below origin of adductor longus b) upper part of inferior pubic ramus	lower <i>2/3</i> of a line extending from lesser trochanter to linea aspera
<i>Pubic part of adductor magnus</i>	ischiopubic ramus (<i>middle area</i>)	a) medial border of gluteal tuberosity. b) linea aspera. c) medial supracondylar line.
<i>Ischial part of adductor magnus</i>	lateral <i>part</i> of lower triangular area of ischial tuberosity	adductor tubercle of the femur
<i>Gracilis</i>	a) lower $\frac{1}{2}$ of body of pubis b) ischiopubic ramus .	upper part of medial surface of tibia between sartorius (<i>anteriorly</i>) & semitendinosus (<i>posteriorly</i>).



Nerve supply the medial compartment

Obturator

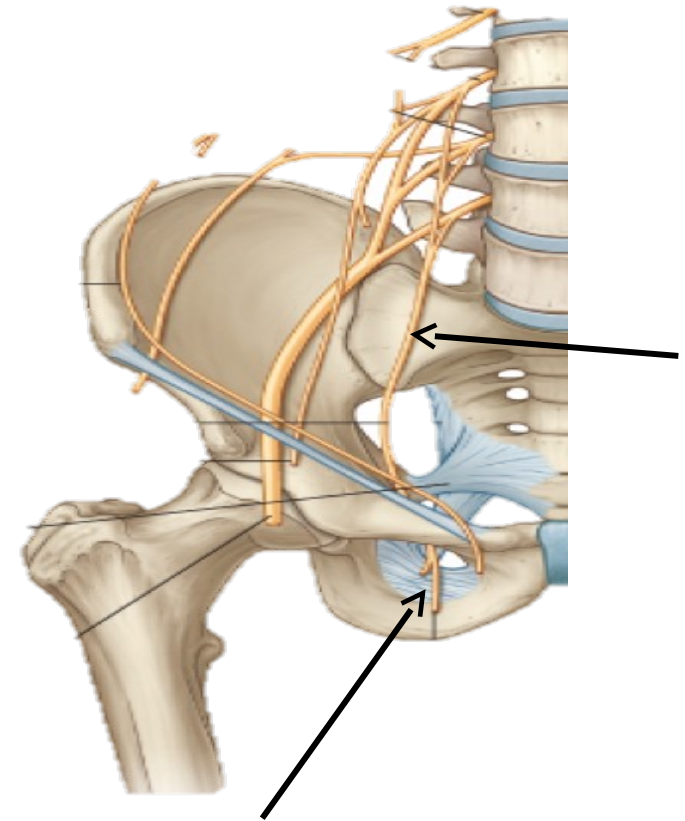
Nerve

:Root value

anterior divisions of the
ventral rami of L2,3, 4

:Course

□ Enters the thigh
through the obturator
.foramen



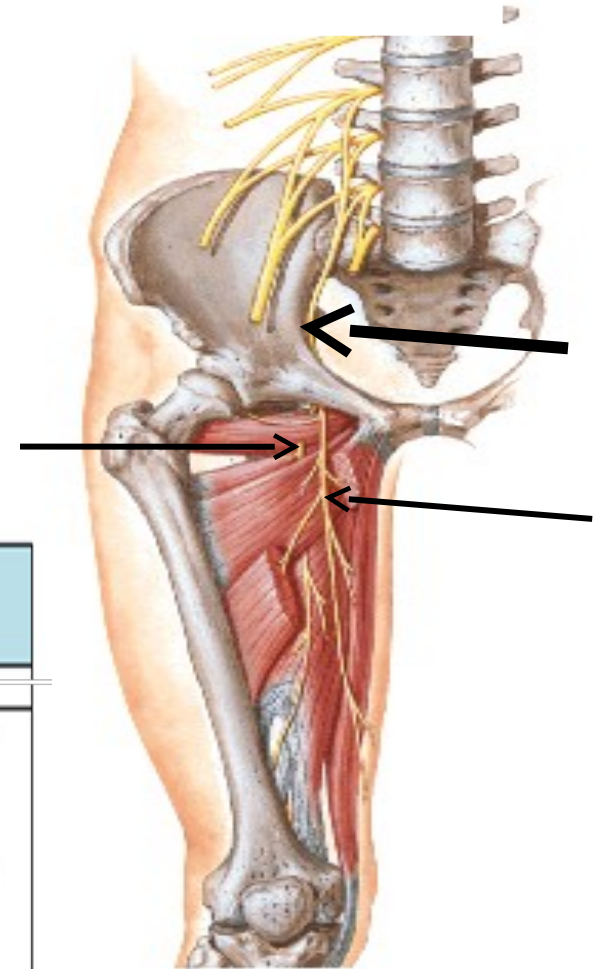
Netter atlas of Anatomy



Nerve supply the medial compartment

Obturator Nerve

□ it is divided into anterior and posterior divisions that pass anterior and posterior to the **adductor brevis**, respectively



	Anterior division	Posterior division
<i>Muscular</i>	-adductor <i>longus</i> , adductor <i>brevis</i> and gracilis - occasionally pectineus	Adductor <i>brevis</i> , pubic part of adductor <i>magnus</i> and obturator <i>externus</i>

Obturator Nerve

Obturator nerve:

- The main nerve supply of the medial compartment of the thigh.
- Root value: anterior divisions of the ventral rami of **L2,3, 4**
- Course:
 - ✓ Enters the thigh through the obturator canal .
 - ✓ At the end of the canal, it is divided into anterior and posterior divisions that pass anterior and posterior to the adductor brevis, respectively.
- Divisions:

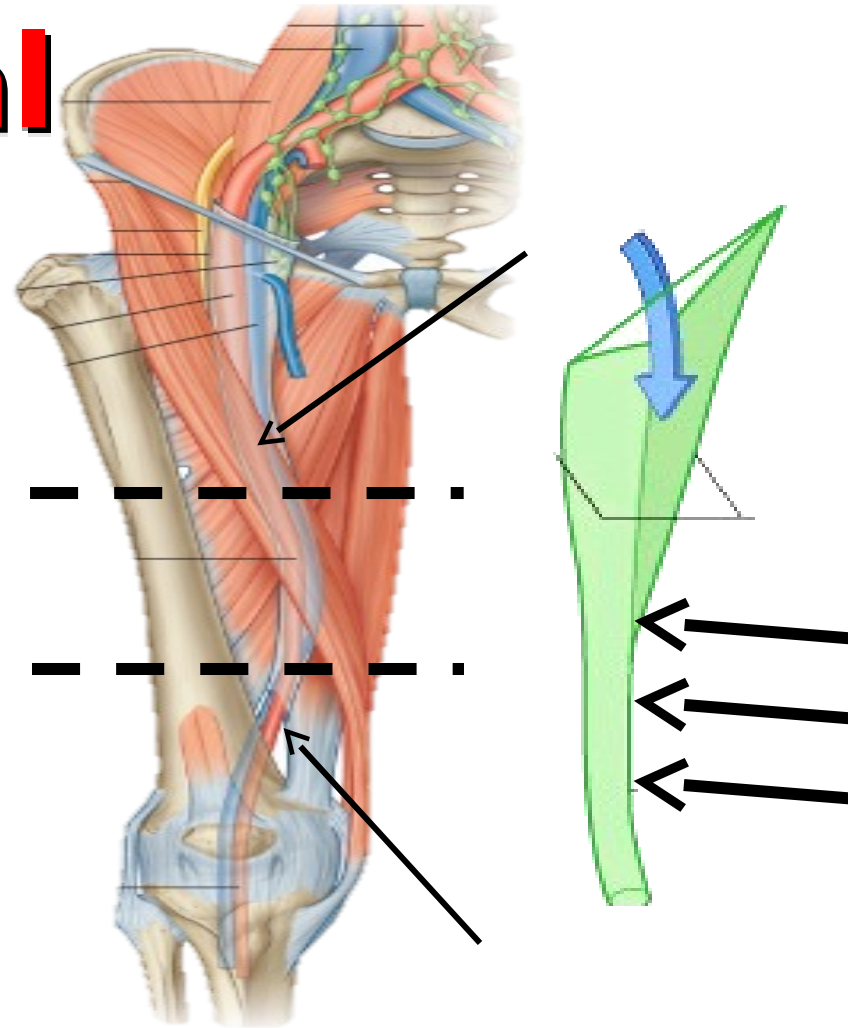
	Anterior division	Posterior division
-Relation	It passes between adductor longus (<i>anteriorly</i>) and adductor brevis (<i>posteriorly</i>)	It passes between adductor brevis (<i>anteriorly</i>) and adductor magnus (<i>posteriorly</i>)
-Branches: Cutaneous	to middle 1/3 of medial side of thigh (via subsartorial plexus)	has no cutaneous branches
Articular	to hip joint	to knee joint
Vascular	to femoral artery in adductor canal	to popliteal artery in popliteal fossa.
Muscular	-adductor <i>longus</i> , <i>adductor brevis</i> and <i>gracilis</i> - occasionally <i>pectineus</i>	<i>Adductor brevis</i> , <i>pubic part of adductor magnus</i> and <i>obturator externus</i>

Adductor canal

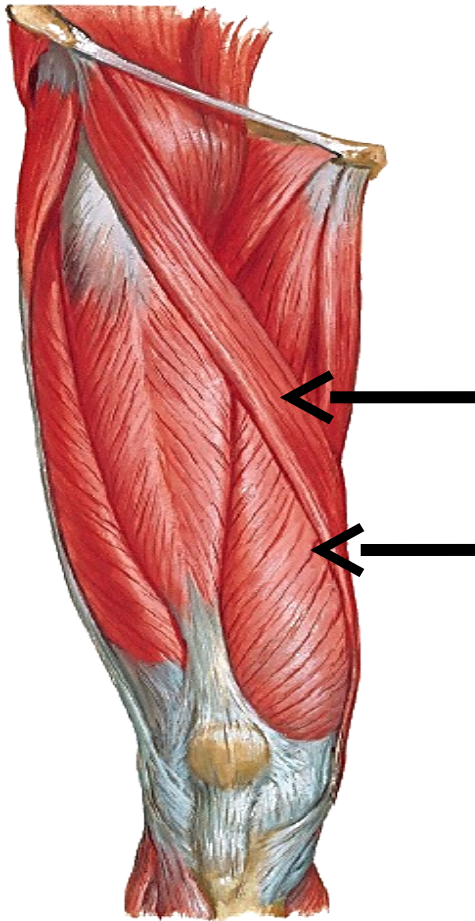


known as
subsartorial canal
& Hunter's canal

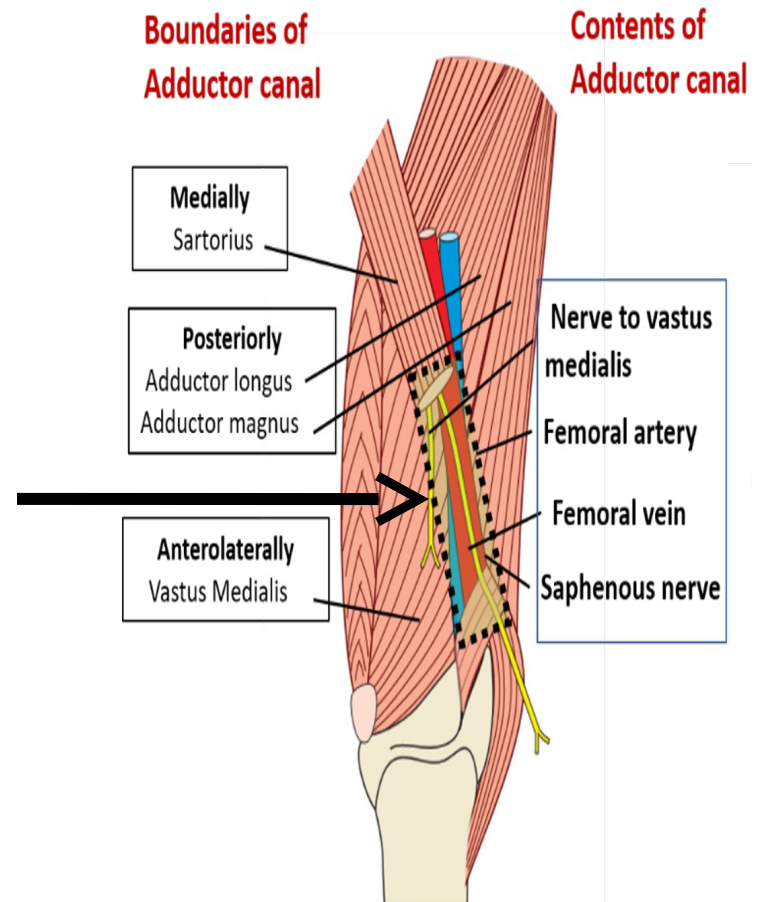
- It is an intermuscular tunnel in the middle $\frac{1}{3}$ of medial side of thigh
- It extends from apex of femoral triangle to opening in adductor magnus



Adductor canal



Anterior view



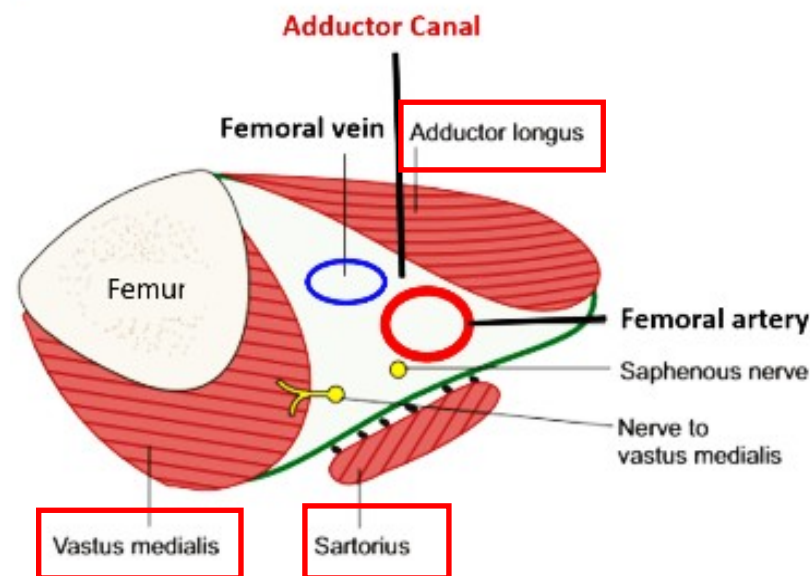
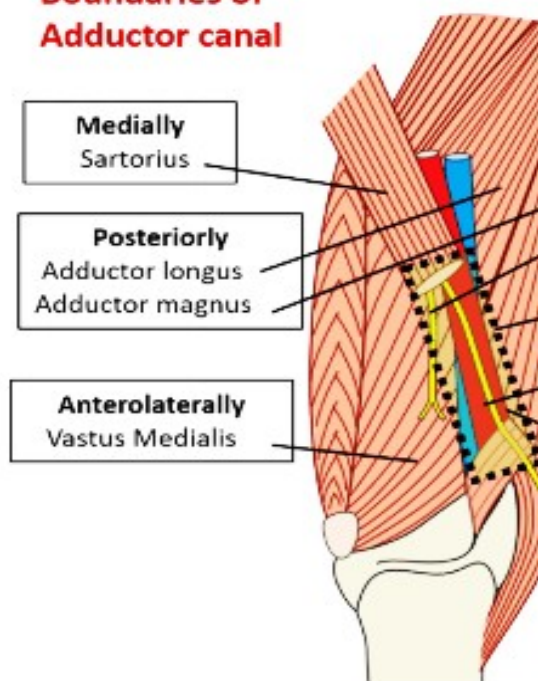
lateral view

Adductor canal



- **Boundaries:** Adductor canal is a tunnel in the thigh and therefore has three walls.
 - **Anterolaterally** it is bounded by **vastus medialis**.
 - **Medially (roof)** it is formed by **sartorius muscle** beneath which lies subsartorial plexuses over a fascial sheath.
 - **Posteriorly** it is bounded by **adductor longus (in upper part)** and **adductor magnus (in lower part)** boundaries of adductor canal.

Boundaries of Adductor canal

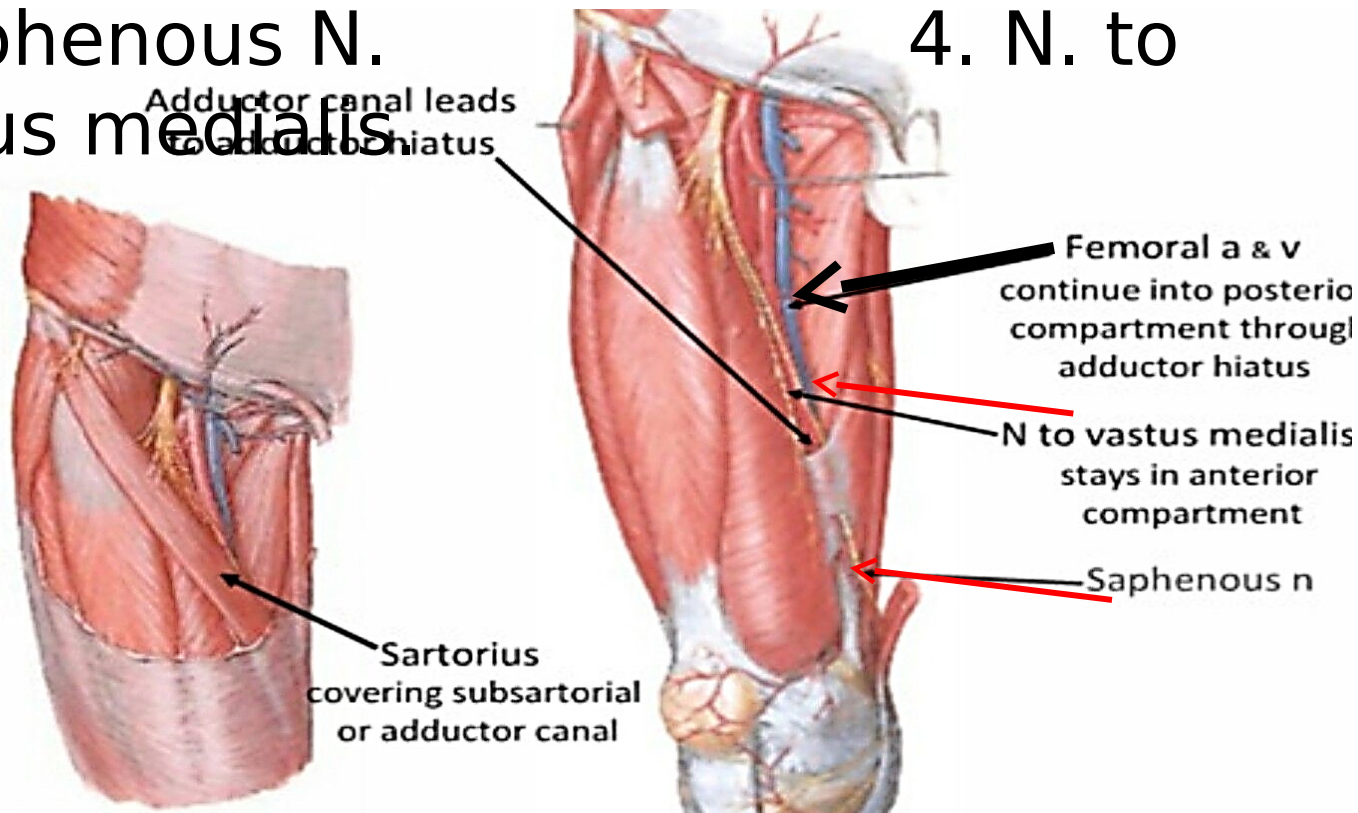


Adductor



Contents of adductor canal

1. Femoral A. vein.
2. Femoral
3. Saphenous N. vastus medialis
4. N. to



Adductor



Applied anatomy canal

Adductor canal block

Local anaesthetic can be administered in the adductor canal to block the **saphenous nerve** in isolation, or together with the nerve to the vastus medialis to provide anaesthesia for procedures involving the distal thigh, knee and lower leg on the medial side.

Adductor canal



:Definition

Is an aponeurotic inter-muscular tunnel in the middle .1/3 of medial side of thigh

Extension: Extends from the apex of the femoral triangle to the opening of the adductor magnus (adductor hiatus) through which it communicates with .the popliteal fossa

:Boundaries: The canal is triangular in cross section

.Anterolateral wall: Is formed by vastus medialis

Posterior wall (floor): Is formed by adductor longus .above & adductor magnus below

Anteromedial wall (roof): Is formed by a strong fibrous (fascial) layer which extends from the vastus medialis to adductor longus and magnus

. This fibrous roof is covered by sartorius muscle

Lecture Quiz



- a) Enumerate muscles present in medial compartment of thigh
- b) Describe boundaries and content of adductor canal

SUGGESTED TEXTBOOKS



Clinical Anatomy by Regions, 9th edition,
2011, Snell RS, Lippincott, Williams and
Wilkins

Atlas of Human Anatomy, 6th edition,
.2014, Netter F.H

Gray's Anatomy for students, 2nd edition,
2011, Drake R. et al, Churchill & Livingstone